Series of
Thematic Studies 3

EUROCLIMA


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Methodological Guide

Climate Change and Soil Degradation in Latin America: Scenarios, Policies and Responses

This summary *sets out the main ideas that are covered in this Guide. The purpose of this publication aimed at estimating soil degradation in Latin America and to analyze scenarios and vulnerabilities to climate change in the field of soil degradation. Furthermore, it presents an inventory by country of relevant development policies, plans and instruments and an inventory of measures to counter soil degradation caused by climate change.*

Deforestation and desertification are the most evident of the degradation forms present in Latin America. Estimations based on satellite information show that Brazil and Honduras are the most deforested countries, while desertification affects a large part of Mexico and is most present in Argentina, Bolivia, Chile and Peru.

The A2 emissions scenario, considered closest to reality due to the trends observed, was the basis for the analysis of the degradation in this research. Socio-economic and political data were incorporated into this scenario, which allows estimation of the future behaviour of the degradation processes.

The results indicate that the arid zones will become still more arid, and many humid areas will become arid. In other areas the reverse effect will be observed, that is arid areas will have more humid conditions, although this effect will be more reduced.

Based on the vulnerability approach and in particular on the concepts of sensitivity, adaptive capacity and exposure, biophysical and socioeconomic variables were incorporated that allow a multi-criteria analysis to be made of the vulnerability. This indicates that the most vulnerable areas are:

- Paraguay
- Southern Bolivia
- Northwest Brazil
- Guatemala
- East coast of Nicaragua
- Southern Mexico

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The topic of soil degradation due to the effects of climate change is related to international commitments signed by all EUROCLIMA beneficiary countries, especially the United Nations Convention to Combat Desertification (UNCCD) and the United Nations Framework Convention on Climate Change (UNFCCC).

Evidence of the high degree of political commitment to compliance is evidenced by the institutional level at which the liaison points are located, generally in the ministries or secretaries of State. Furthermore, the countries have Action Programmes to Combat Desertification within the UNCCD framework. Its preparation and implementation involves the active participation of civil society, scientific institutions and NGOs.

Finally, measures to counter desertification are described including the depiction of several case studies. The actions include:

- Forestry programmes
- Financial mechanisms linked to the managing of natural resources
- Incentives for conservation, agroforestry and conservation agriculture, among others

Some Figures:

The study found that 34,5% (6,9 million km^2) of the area of Latin America were arid, semi-arid and dry sub-humid zones with different degrees of desertification:

- 49% (9,8 million km^2) have water erosion risk.
- The loss of forests by deforestation affects 6,5% (1,3 million km^2).
- 56,3% (11,2 million km^2) show chemical degradation.

The climate change analysis under the A2 emissions scenario forecasts the following:

- 20,8% (4,1 million km^2) of the region will be more arid.
- 1,5% (298 thousand km^2) will have a more humid regime.
- Very high vulnerability is estimated for 1,6 million km^2 (8%), and high and medium vulnerability for 6 and 2,6 million km^2 respectively (12,9% and 30,2%).
- With the A2 scenario, vulnerability will increase for arid and semi-arid areas, affecting 26,3% (5,3 million km^2).

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Study objective: Conduct a study on soil degradation in Latin America and the effect of climate change on these processes in order to create a text that serves for planning and carrying out activities to combat soil degradation.

Author: Ronald Ontiveros.

The Focal Points in the 18 countries that participate in the Programme, defined the topics and objectives of these thematic studies according to their needs as policy makers; they also provided key data, reviewed and corrected reports.

Supervision: Jan Karremans (Technical Assistance), Catherine Ghyoot (EuropeAid/G/2).

The EUROCLIMA thematic series can be downloaded at: **www.euroclima.org**

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